ORDER NO. SD81061946C8

Service Manual

Turntable System
SL-Q212
[E], [EK], [XL], [EG], [EB],
[EF], [XA], [XM], [EH], [Ei], [EC]

SL-Q212(K)
[E], [EK], [XL], [EG], [EB],
[EF], [XA], [XM], [EH], [Ei], [EC]

- * The colors of this model include silver and black.
- * The black type model is provided with (K) in the Service Manual.

Areas

- * [E] is available in Switzerland and Scandinavia.
- * [EK] is available in United Kingdom.
- * [XL] is available in Australia.
- * [EG] is available in F.R. Germany.
- * [EB] is available in Belgium.
- * [EF] is available in France.
- * [XA] is available in Southeast Asia, Oceania, Africa, Middle Near East and Central South America.
- * [XM] is available in Central South America.
- * [EH] is available in Holland.
- * [Ei] is available in Italy.
- * [EC] is available in Czechoslovakia.

English

Specifications

Specifications are subject to change without notice for further improvement.
Weight and dimensions shown approximate.

■ General

Power supply:	~110–120/220–240V, 50 or 60 Hz
Power consumption:	7 W
Dimensions: (W×H×D)	43×10.6×37.5 cm (16-15/16''×4-7/32''×14-3/4'') (Maximum height when top (dust cover) is open. 43×37×42 cm 16-15/16''×14-9/16''×16-17/32'')
Weight:	6 kg (13.2 lb.)

■ Turntable section

Type:	Quartz direct drive Automatic turntable Auto return Auto stop
Drive method:	Direct drive
Motor:	Brushless DC motor
Drive control method:	Quartz-phase-locked control
Turntable platter	Aluminum die-cast Diameter 31.2 cm (12-9/32'')
Turntable speeds:	33-1/3 rpm and 45 rpm
Wow and flutter:	0.012% WRMS* 0.025% WRMS (JIS C5521) ±0.035% peak (IEC 98A Weighted)

*This rating refers to turntable assembly alone, excluding effects of record, cartridge or tonearm, but including platter. Measured by obtaining signal from built-in frequency generator of motor assembly.

Rumble:	–56 dB (IEC 98A Unweighted) –78 dB (IEC 98A Weighted)

■ Tonearm section

Type:	Universal tonearm "S" shaped tubular arm Static balanced type
Effective length:	230 mm (9-1/16'')
Overhang:	15 mm (19/32'')
Tracking error angle:	Within 2°32′ at the outer groove of 30 cm (12'') record Within 0°32′ at the inner groove of 30 cm (12'') record
Offset angle:	22°
Friction:	Less than 7 mg (lateral, vertical)
Effective mass:	11 g (without cartridge)
Stylus pressure adjustment range:	0–2.5 g
Applicable cartridge weight range:	5—7.5 g
Headshell weight:	7.5 g
Phono cable capacitance:	135 pF

Technics

Matsushita Electric Trading Co., Ltd.
P.O. Box 288, Central Osaka Japan

■ Cartridge section (EPC-U25S)

Type:	Moving magnet
Frequency response:	10 Hz to 35 kHz 20 Hz to 10 kHz±1 dB
Output voltage:	2.5 mV at 1 kHz 5 cm/s. zero to peak lateral velocity (7 mV at 1 kHz 10 cm/s. zero to peak 45° velocity [DIN 45 500])
Channel separation:	22 dB at 1 kHz
Channel balance	Within 1.8 dB at 1 kHz
Compliance (dynamic):	10×10^{-6} cm/dyne at 100 Hz
Stylus pressure:	1.75±0.25 g (17.5±2.5 mN)
Load capacitance:	Less than 300 pF
Weight:	5 g (cartridge only)
Replacement stylus:	EPS-25CS (Equivalent replacement stylus: EPS-25ES)

Deutsch

TECHNISCHE DATEN

Änderungen de technischen Daten vorbehalten.
Die angegebenen Gewichts- und Abmessungsdaten sind circa Werte.

■ Allgemeine Daten

Stromversorgung:	~110–120/220–240 V, 50/60 Hz Wechselstrom
Leistungsaufnahme:	7 W
Abmessungen (B×H×T):	43×10,6×37,5 cm (Maximale Höhe bei vollständig geöffnetem Oberteil (Staubabdeckung). 43×37×42 cm)
Gewicht:	6 kg

■ Plattenspieler

Typ:	Quarz-Direktanrieb Automatischer Plattenspieler Rückführautomatik Stopautomatik
Antrieb:	Direktantrieb
Motor:	Kollektorloser Gleichstrommotor
Antriebsregel-Methode:	Quarz-Steuerung QPL
Plattenteller:	Aluminium-Spritzguß Durchmesser 31,2 cm
Plattenteller-Drehzahlen:	33-1/3 und 45 U/min
Gleichlaufschwankungen:	0,012% WRMS* 0,025% WRMS (JIS C5521) ±0,035% Spitze (IEC 98A bewertet)

*Diese Nennleistung bezieht sich auf das Laufwerk-Bauteil allein, ausschließlich Einflüsse von Schallplatte, Tonabnehmer oder Tonarm, aber einschließlich Plattenteller. Gemessen anhand von Signalen vom eingebauten Frequenzgenerator des Motorbauteils.

Rumpel-Fremdspannungsabstand:	−56 dB (IEC 98A unbewertet)
Rumpel-Geräuschspannungsabstand:	−78 dB (IEC 98A bewertet)

■ Tonarm

Typ:	Universal-Tonarm S-förmiger Rohrtonarm Statisch ausbalanciert
Effektive Länge:	230 mm
Überhang:	15 mm
Spurfehlwinkel:	2°32′ bei der Einlaufrille einer 30 cm-Platte 0°32′ bei der Auslaufrille einer 30 cm-Platte
Kröpfungswinkel:	22°
Lagerreibung:	Weniger als 7 mg (horizontal, vertikal)
Effektive Masse:	11 g (ohne Tonabnehmer)
Auflagekraft-Einstellbereich:	0—2,5 g
Zulässiger Tonabnehmer-Gewichtbereich:	5—7.5 g
Tonarmkopf-Gewicht:	7,5 g
Phonokabl-Kapazitanz:	135 pF

■ Tonabnehmer (EPC-U25S)

Typ:	Magnetischer Tonabnehmer
Frequenzgang:	10 Hz bis 35 kHz 20 Hz bis 10 kHz ±1 dB
Ausgangsspannung:	2,5 mV bei 1 kHz 5 cm/s. Null-zu-Spitze, lateral [7 mV bei 1 kHz 10 cm/s. Null-zu-Spitze, 45° (DIN 45 500)]
Kanaltrennung:	22 dB bei 1 kHz
Kanalabweichung:	Innerhalb 1,8 dB bei 1 kHz
Nachgiebigkeit (dynamisch):	10×10^{-6} cm/dyn bei 100 Hz
Auflagekraft:	1,75±0,25 g (17,5±2,5 mN)
Impedanz:	47 kΩ bis 100 kΩ
Gewicht:	5 g (nur Tonabnehmer)
Ersatznadel:	EPS-25CS (Gleichwertige Ersatznadel EPS-25ES.)

Français

CARACTERISTIQUES

Les spécifications sont susceptibles d'être modifiées sans préavis.
Le poids et les dimensions donnés sont approximatifs.

■ Généralités

Alimentation: Alternatif 110-120/220-240V, 50 ou 60 Hz
Consommation: 7 W
Dimensions: (L×H×P) 43×10,6×37,5 cm
(Hauteur maximum lorsque le dessus (couvercle protège-poussière) est ouvert. 43×37×42 cm)
Poids: 6 kg

■ Platine de lecture

Type: Entraînement direct à quartz
Platine automatique
Retour automatique
Arrêt automatique
Système d'entraînement: Entraînement direct
Moteur: Moteur C.C. sans balai
Groupe de réglage: Réglage d'accrochage de phase par quartz
Plateau de lecture: En aluminium moulé sous pression
Diamètre 31,2 cm
Vitesses de rotation: 33-1/3 et 45 t/p. m.
Pleurage et scintillement: 0,012% de valeur efficace*
0.025% de valeur efficace (JIS C5521)
±0,035% de crête (IEC 98A Pondéré)

*Ce régime nominal se rapporte à l'ensemble du tourne-disque seul, excluant les effets du disque, de la cellule pick-up ou du bras de lècture, mais comprenant le plateau, Mesuré par l'obtention d'un signal provenant du générateur de fréquences incorporé de l'ensemble du moteur.

Ronflement: −56 dB (IEC 98A Non pondéré)
−78 dB (IEC 98A Pondéré)

■ Bras de lecture

Type: Bras de lecture universel
Bras tubulaire en forme de "S"
De type à équilibrage statique
Longueur effective: 230 mm
Porte-à-faux: 15 mm
Angle d'erreur de piste: En deçà de 2°32' au sillon extérieur d'un disque de 30 cm
En deçà de 0°32' au sillon intérieur d'un disque de 30 cm
Angle de décalage: 22°
Frottement: Moins de 7 mg (latéral et vertical)
Masse réelle: 11 g (sans la cellule pick-up)
Plage de réglage de la pression d'appui: 0–2,5 g
Gamme du poids des cellules pick-up utilisables: 5—7.5 g
Poids de la coque porte-cellule: 7,5 g
Capacitance propre du câble pick-up: 135 pF

■ Cellule pick-up (EPC-U25S)

Type: Aimant mobile
Réponse en fréquence: 10 Hz à 35 kHz
20 Hz à 10 kHz±1 dB
Tension de sortie: 2,5 mV à 1 kHz; 5 cm/s., zéro à vitesse latérale de crête
(7 mV à 1 kHz 10 cm/s., zéro à vitesse 45° de crête [DIN 45 500])
Séparation de canal: 22 dB à 1kHz
Equilibrage des canaux: En deçà de 1,8 dB à 1 kHz
Elasticité (dynamique): 10×10⁻⁶ cm/dyne à 100 Hz
Pression de la pointe de lecture: 1,75±0,25 g (17,5±2,5 mN)
Impédance de charge: 47 kΩ to 100 kΩ
Poids: 5 g (cellule seule)
Pointe de lecture de remplacement: EPS-25CS
(Pointe de lecture de remplacement équivalente: EPS-25ES.)

Español

ESPECIFICACIONES

Las especificaciones quedan sujetas a cambios sin aviso previo.
El peso y las dimensiones indicados son aproximados.

■ En general

Alimentación de corriente: ~110–120/220–240 V, 50 ó 60 Hz
Consumo de corriente: 7 W
Dimensiones: (Ancho×Alto×Prof.) 43×10,6×37,5 cm
(Altura máxima cuando la parte de arriba (tapa contra el polvo) está abierta. 43×37×42 cm)
Peso: 6 kg

■ Sección del plato giratorio

Tipo: Accionamiento directo por cuarzo
Plato giratorio automático
Retorno automático
Parada automática
Método de accionamiento: Accionamiento directo
Motor: Motor de corriente continua sin escobillas

Método de control de accionamiento:	Control enclavado de fase de cuarzo
Platillo del plato giratorio:	Aluminio fundido Diámetro 31,2 cm
Velocidades del plato giratorio:	33-1/3 y 45 rpm
Ululaciones y trémolo:	0,012% WRMS* 0,025% WRMS (JIS C5521) ±0,035% cresta (IEC 98A Ponderado)

*Estas características se refieren únicamente al conjunto del plato giratorio, con exclusión de los efectos provenientes del disco, cartucho o del brazo sonoro, incluyendo, empero, el platillo. La medida fue tomada por medio de la señal obtenida del generador de frecuencia incorporado del conjunto del motor.

Ruido de rodadura:	−56 dB (IEC 98A No ponderado) −78 dB (IEC 98A Ponderado)

■ Sección del brazo sonoro

Tipo:	Brazo sonoro universal Brazo tubular en forma de "S" Tipo equilibrado estático
Longitud efectiva:	230 mm
Proyección:	15 mm
Angulo de error de seguimiento:	Inferior a 2°32′ en el surco exterior de un disco de 30 cm Inferior a 0°32′ en el surco interior de un disco de 30 cm
Angulo de descentramiento:	22°
Fricción:	Menos de 7 mg (en sentido lateral y vertical)
Masa efectiva:	11 g (sin cartucho)
Radio de ajuste de la presión de la aguja:	0 a 2,5 g
Radio de peso de cartucho utilizable:	5—7,5 g
Peso de la cápsula de la cabeza:	7,5 g
Capacitancia de cable de fono:	135pF

■ Sección del cartucho (EPC-U25S)

Tipo:	Imán móvil
Respuesta de frecuencia:	de 10 Hz a 35 kHz de 20 Hz a 10 kHz±1 dB
Voltaje de salida:	2,5 mV a 1 kHz Con velocidad lateral de cero a cresta de 5 cm/s [7 mV a 1 kHz Velocidad de 45° de cero a cresta de 10 cm/s (DIN 45 500)]
Separación de canales:	22 dB a 1 kHz
Equilibrio de canales:	Sin exceder 1,8 dB a 1 kHz
Elasticidad (dinámica):	10×10^{-6} cm/dina a 100 Hz
Presión de la aguja:	1,75 ±0,25 g (17,5 ±2,5 mN)
Impedancia de carga:	47 kΩ a 100 kΩ
Peso:	5 g (cartucho sólo)
Aguja de recambio:	EPS-25CS (Aguja de recambio equivalente: EPS-25ES.)

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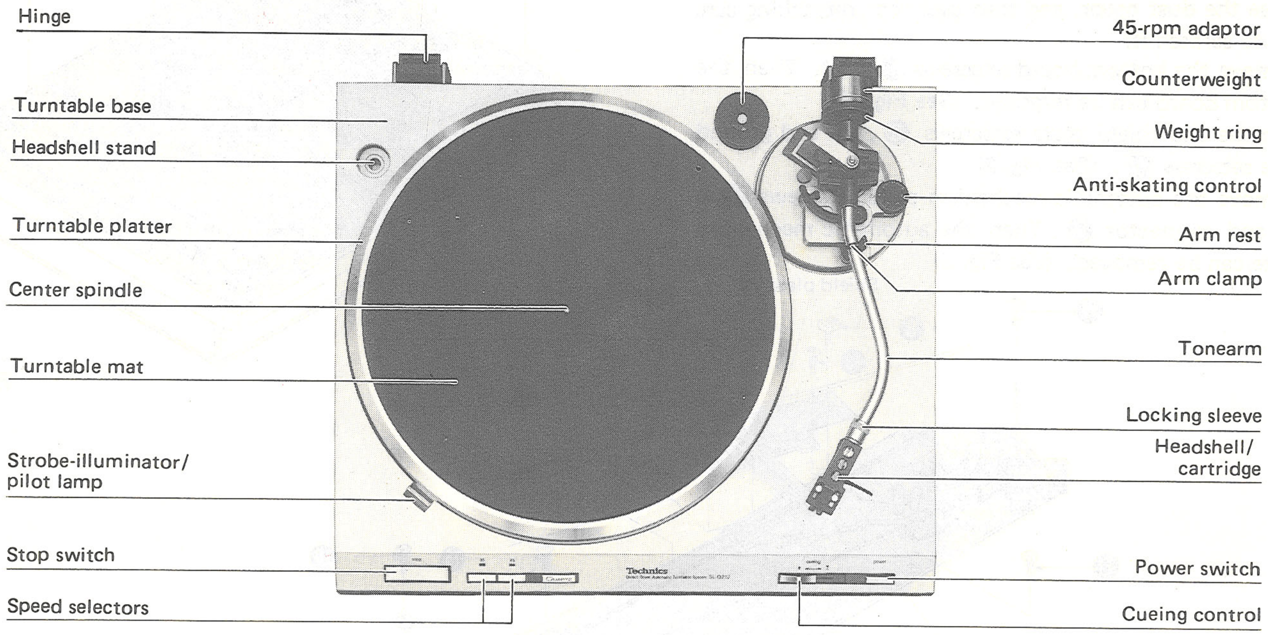
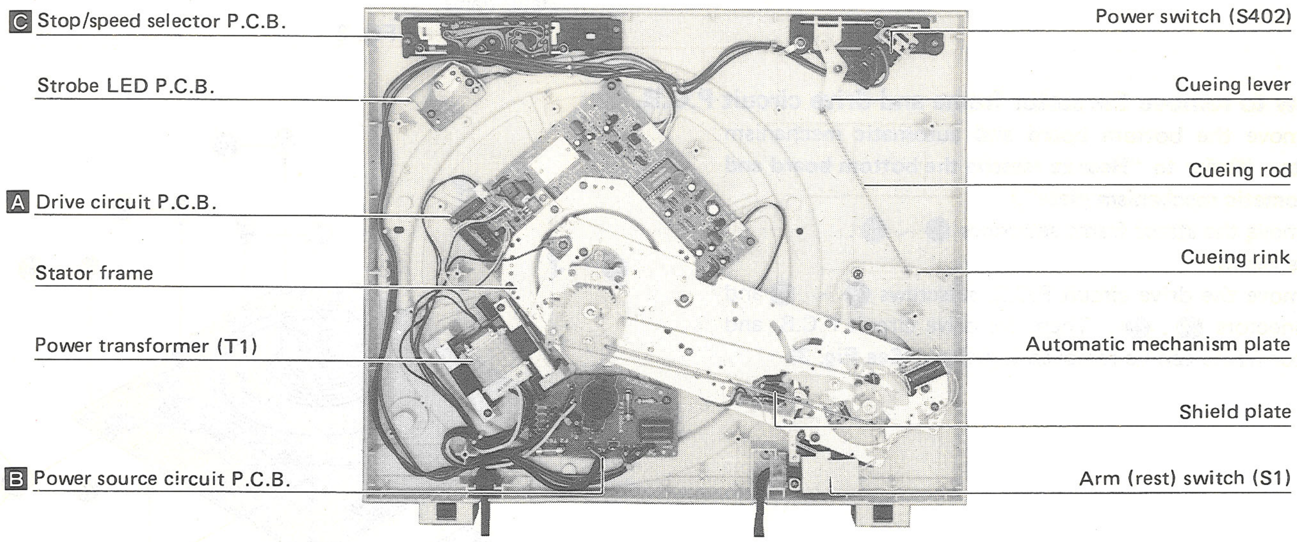
■ LOCATION OF CONTROLS


Hinge
Turntable base
Headshell stand
Turntable platter
Center spindle
Turntable mat
Strobe-illuminator/ pilot lamp
Stop switch
Speed selectors
45-rpm adaptor
Counterweight
Weight ring
Anti-skating control
Arm rest
Arm clamp
Tonearm
Locking sleeve
Headshell/ cartridge
Power switch
Cueing control
Technics


C Stop/speed selector P.C.B.
Strobe LED P.C.B.
A Drive circuit P.C.B.
Stator frame
Power transformer (T1)
B Power source circuit P.C.B.
Power switch (S402)
Cueing lever
Cueing rod
Cueing rink
Automatic mechanism plate
Shield plate
Arm (rest) switch (S1)

■ DISASSEMBLY INSTRUCTIONS

• How to remove the bottom board and automatic mechanism plate

1. Fix the tonearm on the rest.
2. Remove the turntable and Headshell.
3. Close the dust cover, and turn over the unit, taking care not to scratch it.
4. Remove the bottom board setscrews ① ~ ⑦. Then, the bottom board can be removed. **(See Fig. 1)**
5. Remove the shield plate setscrews ⑧, ⑨ and ground wire setscrew ⑩. **(See Fig. 2)**
6. Remove the automatic mechanism plate setscrews ⑪ ~ ⑮ and connector ⑯. Then, the automatic mechansim plate can be removed. **(See Fig. 2)**

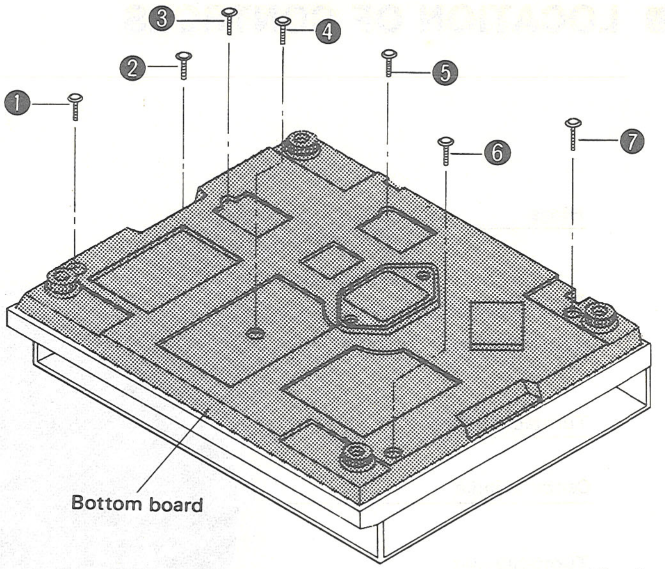

①
②
③
④
⑤
⑥
⑦
Bottom board

Fig. 1

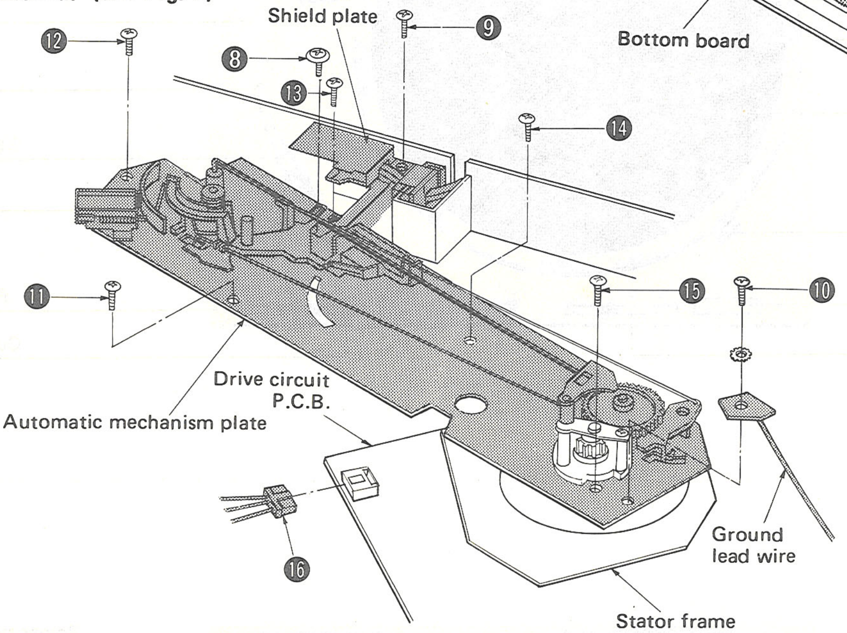

Shield plate
⑨
⑫
⑧
⑬
⑭
⑮
⑩
⑪
Drive circuit P.C.B.
Automatic mechanism plate
⑯
Ground lead wire
Stator frame

Fig. 2

• How to remove the stator frame and drive circuit P.C.B.

1. Remove the bottom board and automatic mechanism plate. **(Refer to "How to remove the bottom board and automatic mechanism plate".)**
2. Remove the stator frame setscrews ⑰ ~ ⑳. **(See Fig. 3)**
3. Remove the drive circuit P.C.B. setscrews ㉑ ~ ㉓ and connectors ㉔, ㉕. Then, the drive circuit P.C.B. and stator frame can be removed together. **(See Fig. 3)**

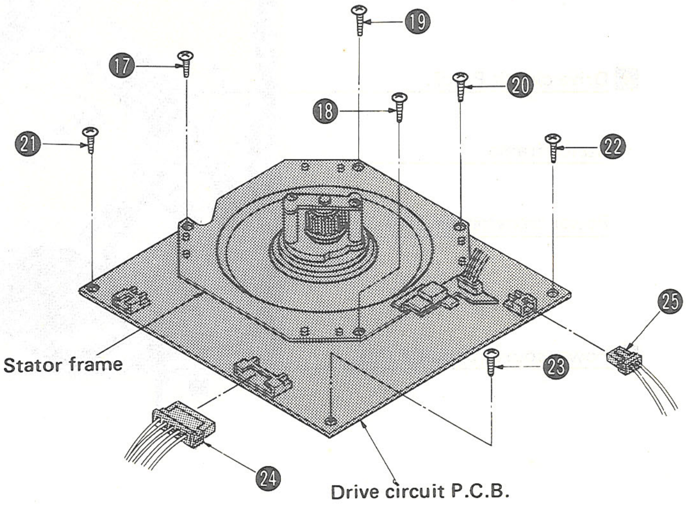

⑲
⑰
⑳
⑱
㉑
㉒
㉕
Stator frame
㉓
㉔
Drive circuit P.C.B.

Fig. 3

- **How to remove the tonearm and lift base plate**

1. Remove the bottom board and automatic mechanism plate. **(Refer to "How to remove the bottom board and automatic mechanism plate".)**
2. Remove the PU fixing plate setscrew ㉖ and canceller spring. **(See Fig. 4)**
3. Unsolder the 5 lead wires from the tonearm. **(See Fig. 4)**
4. Remove the tonearm setscrews ㉗ and ㉘ . Then, the tonearm can be removed. **(See Fig. 4)**
5. To disassemble the lift substrate, diseangage the arm lift fixing screw ㉙ before turning over the body, the remove the arm lift. **(See Fig. 5)**
   Note: Remove the spring under the arm lift at the same time.
6. Remove the anti-skating control knob. **(See Fig. 5)**
7. Turn over the unit and remove the PU fixing plate.
8. Remove the lift base plate setscrews ㉚ ~ ㉜ . Then, the lift base plate can be removed. **(See Fig. 4)**

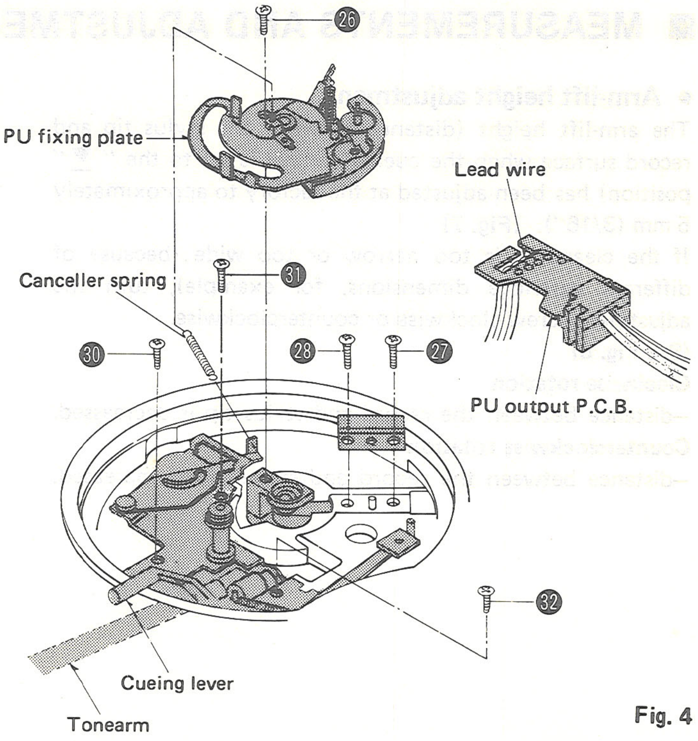

㉖
PU fixing plate
Lead wire
Canceller spring
㉛
㉚
㉘
㉗
PU output P.C.B.
㉜
Cueing lever
Tonearm

Fig. 4

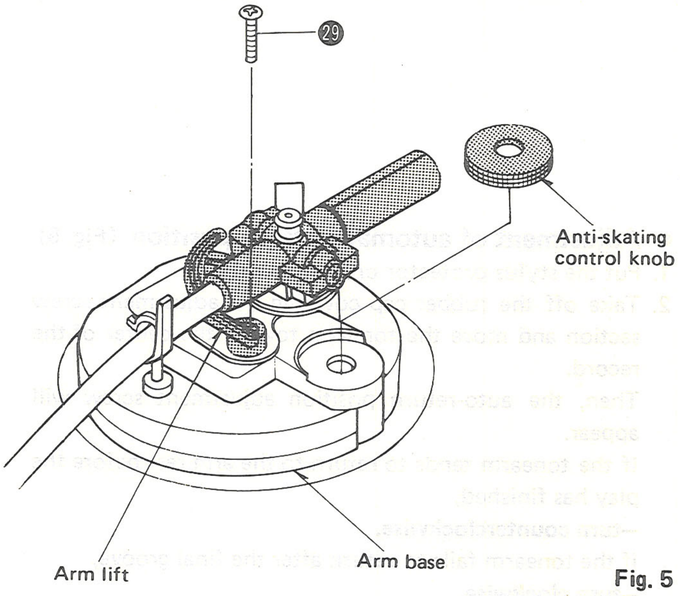

㉙
Anti-skating control knob
Arm lift
Arm base

Fig. 5

■ REPLACEMENT OF HALL ELEMENT

When replacing the Hall element, note that the Hall element surface must be faced to the magnet of the turntable.
The legs are allowed to be reverse in position provided that the surface is up. **(See Fig. 6)**

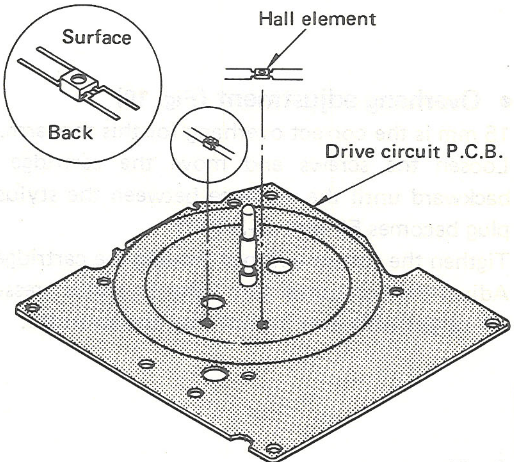

Surface
Back
Hall element
Drive circuit P.C.B.

Fig. 6

■ MEASUREMENTS AND ADJUSTMENTS English

- **Arm-lift height adjustment**

The arm-lift height (distance between the stylus tip and record surface when the cueing control is set to the " ▼ " position) has been adjusted at the factory to approximately 5 mm (3/16"). **(Fig. 7)**

If the clearance is too narrow or too wide (because of different cartridge dimensions, for example), turn the adjustment screw clockwise or counterclockwise.

(See Fig. 8)

Clockwise rotation

—distance between the record and stylus tip is decreassed.

Counterclockwise rotation

—distance between the record and stylus tip is increased.

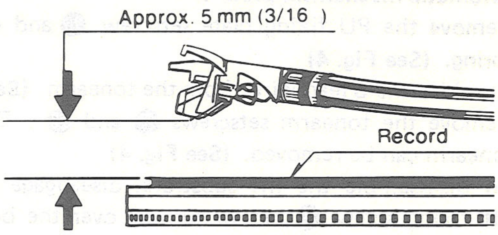


Fig. 7
(Abb. 7)

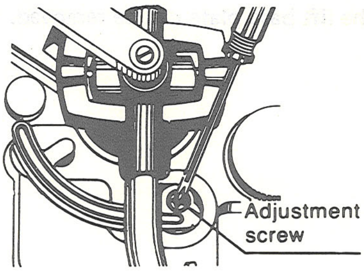


Fig. 8
(Abb. 8)

- **Adjustment of automatic return position** (Fig. 9)

1. Put the stylus protector on the cartridge.
2. Take off the rubber cap covering the adjustment screw section and move the tonearm toward the center of the record.
   Then, the auto-return position adjustment screw will appear.
   If the tonearm tends to return to the arm rest before the play has finished,
   —turn counterclockwise.
   If the tonearm fails to return after the final groove,
   —turn clockwise.

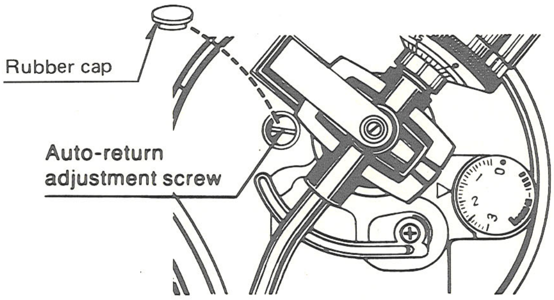


Fig. 9
(Abb. 9)

- **Overhang adjustment** (Fig. 10)

15 mm is the correct overhang for this tonearm.

Loosen the screws and move the cartridge forward or backward until the distance between the stylus tip and the plug becomes 52 mm (2-3/64").

Tigthen the screws without moving the cartridge.

Adjust the horizontal zero balance, stylus pressure and arm-lift height whenever you change the cartridge.

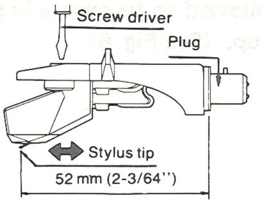


Fig. 10
(Abb. 10)

■ MESSUNGEN UND JUSTIERUNGEN Deutsch

• Justierung der Tonarmlifthöhe

Die Tonarmlifthöhe, d.h. der Abstand zwischen Nadelspitze und Schallplattenoberfläche bei Liftsteuerungs-Position "▼", wurde werkseitig auf ca. 5 mm eingestellt. **(Abb. 7)**

Falls der Abstand zu klein oder zu groß ist (z.B. wegen der unterschiedlichen Tonabnehmer-Abmessungen), drehen Sie die Justierschraube im Uhrzeigersinn oder entgegen dem Uhrzeigersinn. **(Abb. 8)**

Drehung im Uhrzeigersinn

—Der Abstand zwischen der Platte und der Nadelspitze wird kleiner.

Drehung entgegen dem Uhrzeigersinn

—Der Abstand zwischen der Platte und der Nadelspitze wird größer.

• Justierung des Abschaltpunktes der Automatik **(Abb. 9)**

(Die Gummikappe abnehmen)

1. Setzen Sie den Nadelschutz auf den Tonabnehmer auf.
2. Führen Sie den Tonarm gegen die Plattenmitte.
   Die Justierschraube für den Abschaltpunkt der Automatik wird dann sichtbar.
   Falls der Tonarm zu früh zurückkehrt.
   —Entgegen dem Uhrzeigersinn drehen.
   Falls der Tonarm nach Erreichen der Auslaufrille nicht zurückkehrt.
   —Im Uhrzeigersinn drehen.

• Justierung dus Überhangs **(Abb. 10)**

Der korrekte Überhang für dieses Gerät beträgt 15 mm.

Lösen Sie die Befestigungsschrauben und versetzen Sie den Tonabnehmer vorwärts oder rückwärts, bis der Abstand zwischen dem Stecker und der Nadelspitze 52 mm beträgt.

Ziehen Sie die Befestigungsschrauben an, ohne dabei den Tonabnehmer zu verschieben.

Justieren Sie die horizontale "0"-Balance, die Auflagekraft und die Tonarmlifthöhe nach jedem Auswechseln des Tonabnehmers.

■ MESURAGES ET RÉGLAGES Français

• Mise au point de la hauteur de l'élévateur du bras

La hauteur de l'élévateur du bras (distance entre l'extrémité de la pointe de lecture et la surface du disque, lorsque la commande de pose et de relevage est à la position "▼") a été réglée en usine sur approximativement 5 mm. **(Fig. 7)**

Si l'intervalle est trop étroit ou trop large, (à cause, par exemple, des différentes dimensions de cellules pick-up), tourner la vis de réglage dans le sens des aiguilles d'une montre ou dans le sens inverse. **(Fig. 8)**

Rotation dans le sens des aiguilled d'une montre.

—La distance entre la surface du disque et l'extrémité de la pointe de lecture diminue.

Rotation dans le sens contraire des aiguilles d'une montre.

—La distance entre la surface du disque et l'extrémité de la pointe de lecture augmente.

• Mise au point de la position de retour automatique **(Fig. 9)**

(Retirer le capuchon en caoutchouc.)

1. Placer le capot protecteur de la pointe de lecture sur la cellule pick-up.
2. Déplacer le bras de lecture vers le centre de disque.
   Alors, la vis de réglage du retour automatique apparaîtra.
   Si le bras de lecture tend à revenir vers le support du bras avant que l'audition ne soit terminée.
   —Tourner dans le sens contraire des aiguilles d'une montre.
   Si le bras de lecture ne peut revenir en arrière après le dernier sillon.
   —Tourner dans le sens des aiguilles d'une montre.

• Réglage du surplomb **(Fig. 10)**

Le surplomb approprié pour ce bras de lecture est de 15 mm.

Desserrer les vis et déplacer la cellule vers l'avant ou vers l'arrière jusqu'à ce que la distance entre l'extrémité de la pointe de lecture et la fiche soit de 52 mm.

Serrer les vis sans faire bouger la cellule.

Mettre au point l'équilibrage zéro horizontal, la force verticale d'appui de la pointe de lecture et la hauteur du bras élévateur chaque fois que vous changez de cellule.

■ MEDICIONES Y AJUSTES — Español

• Ajuste de la altura de elevación del brazo

La altura de elevación del brazo (o sea, la distancia entre la punta de la aguja y la superficie del disco cuando el control de colocación está en la posición "▼") ha sido regulada en la fábrica aproximadamente a 5 mm. **(Fig. 7)**

En caso que el espacio libre fuese demasiado estrecho o demasiado abundante (debido, por ejemplo, a la diferencia en dimensiones de los cartuchos), girar el tornillo de ajuste hacia la derecha o hacia la izquierda. **(Fig. 8)**

Rotación hacia la derecha

—reduce la distancia entre el disco y la punta de la aguja.

Rotación hacia la izquierda

—aumenta la distancia entre el disco y la punta de la aguja.

• Ajuste de la posición para retorno automático (Fig. 9)

(Quitar la tapita de goma.)

1. Colocar la protección de la aguja en el cartucho.
2. Mover el brazo sonoro hacia el centro del disco.
   Con ello, aparecerá el tornillo de ajuste del retorno automático.
   Cuando el brazo sonoro tienda a volver a su apoyo antes de terminar la ejecución:
   —Girar hacia la izquierda.
   En caso que el brazo sonoro no vuelva después de haber tocado el último surco del disco:
   —Girar hacia la derecha.

• Ajuste de la proyección (Fig. 10)

La proyección correcta para este cartucho es de 15 mm.

Aflojar los tornillos y mover el cartucho para adelante y para atrás hasta que la distancia entre la punta de la aguja y la clavija sea de 52 mm.

Apretar los tornillos sin mover el cartucho.

Regular el equilibrio horizontal a cero, la presión de la aguja y la altura de elevación del brazo toda vez que se cambia el cartucho.

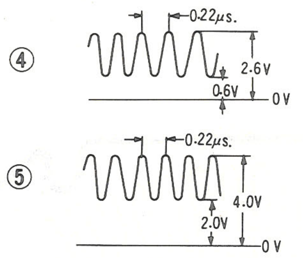
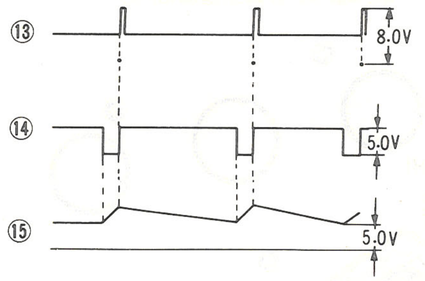
■ TROUBLE SHOOTING GUIDE

1. No rotation

<table>
<tr><th></th><th>Check point</th><th>Checking method</th><th>Possible defects</th></tr>
<tr><td>1</td><td>Power supply circuit</td><td>Q3 emitter voltage ──► 14.3V</td><td>Q1 ~ 3
D1, 2</td></tr>
<tr><td>2</td><td>Constant voltage circuit</td><td>Q201 emitter voltage ──► 9.4V</td><td>Q201</td></tr>
<tr><td>3</td><td>Control circuit (S/S circuit)</td><td>With arm switch (S1) turned on/off, the voltage changes of IC201 terminal ⑲ are as follows:
S1 "on" ──► 7.0V
"off" ──► 0V</td><td>S1
IC201</td></tr>
<tr><td>4</td><td>Drive circuit</td><td>Voltage ar each terminal of IC101 (in start mode)
(S1 . . . . . "on")
<table>
<tr><td>Terminal</td><td>①</td><td>②</td><td>③</td><td>④</td><td>⑤</td><td>⑥</td><td>⑦</td><td>⑧</td><td>⑨</td><td>⑩</td><td>⑪</td><td>⑫</td></tr>
<tr><td>Voltage</td><td>13.7</td><td>9.4</td><td>13.6</td><td>3.3</td><td>3.3</td><td>3.3</td><td>3.3</td><td>0</td><td>4.2</td><td>6.4</td><td>5.1</td><td>0</td></tr>
<tr><td>Terminal</td><td>⑬</td><td>⑭</td><td>⑮</td><td>⑯</td><td>⑰</td><td>⑱</td><td>⑲</td><td>⑳</td><td>㉑</td><td>㉒</td><td>㉓</td><td>㉔</td></tr>
<tr><td>Voltage</td><td>14.3</td><td>13.7</td><td>14.3</td><td>13.6</td><td>0.6</td><td>0.6</td><td>0</td><td>0.6</td><td>0.6</td><td>0</td><td>8.0</td><td>7.5</td></tr>
</table>
</td><td>IC101</td></tr>
</table>

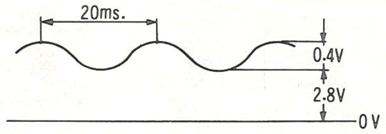
Note: Besides the above-mentioned defects, burnt-out drive coil is also possible. But if it is on one phase, the motor rotates although the driving torque is halved. Also, it is possible that both Hall elements are defective.

2. Unstable rotation (Uneven rotation, repeat of normal and reverse rotations)

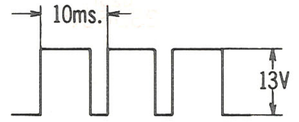
	Check point	Checking method	Possible defects
1	Control circuit (Crystal oscillator)	Measure the waves at IC201 terminals ④ and ⑤. 	X201 IC201
2	Control circuit (Brake, timer circuit)	Voltage at IC201 terminals ⑳ and ㉑. (S1 . . . . "on") ⑳ ⟶ 5.9V ㉑ ⟶ 4.2V	IC201 IC101
3	Control circuit (Control output circuit)	Measure the waves at IC201 terminals ⑬, ⑭, ⑮. 	IC201

Note: Besides the above, it is possible that Hall elements are defective. In this case, the symptom may be that the turntable reversely rotates because the turntable position cannot be detected.

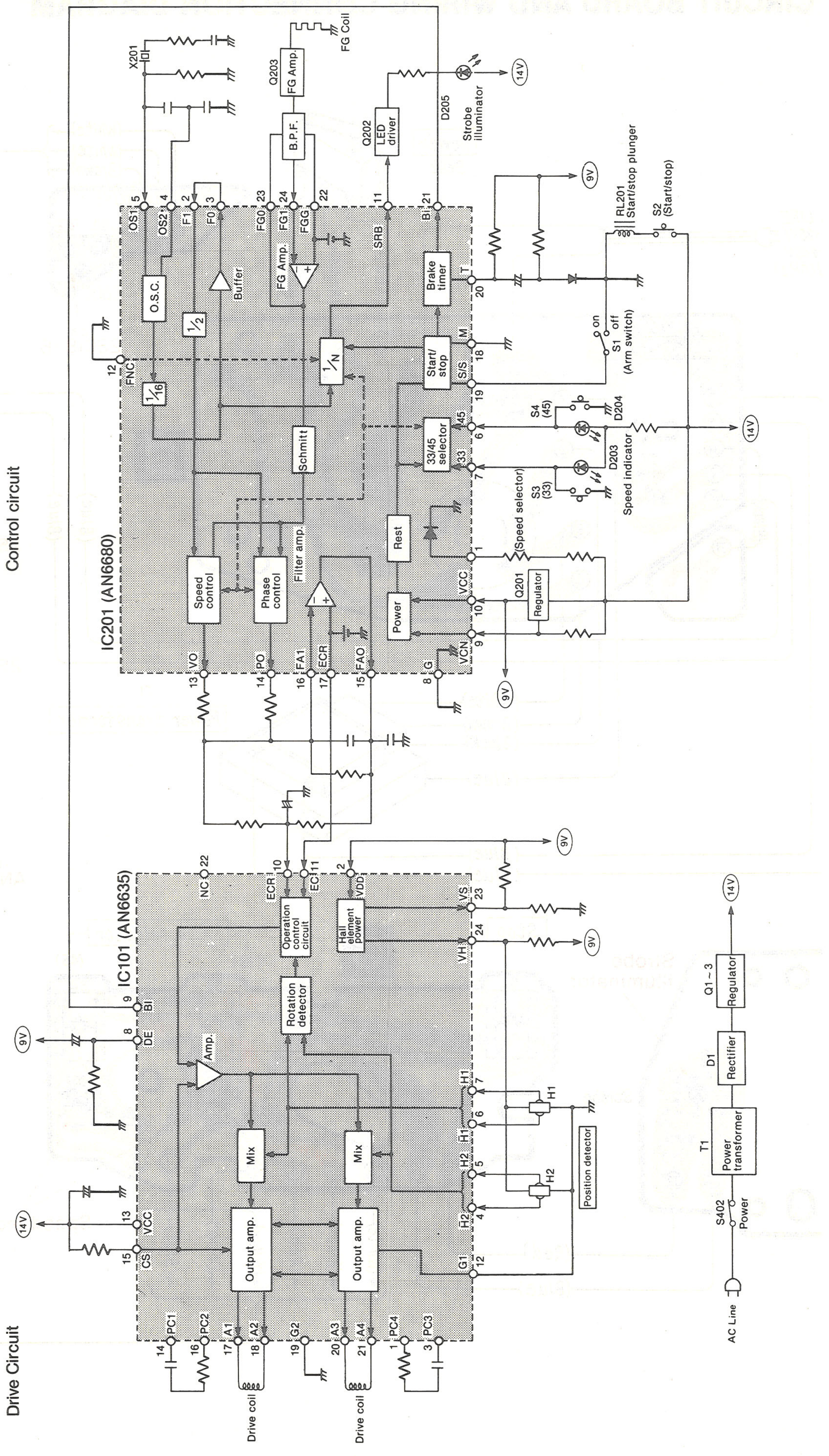
3. Abnormal rotation

	Check point	Checking method	Possible defects
1	FG amplifier circuit	Measure the wave at IC201 terminal ㉓. 	Q203 IC201 FG coil pattern breakage
2	Control circuit (Reference voltage circuit)	Voltage of IC201 terminal ⑰ ⟶ 5.1V.	IC201

4. Others

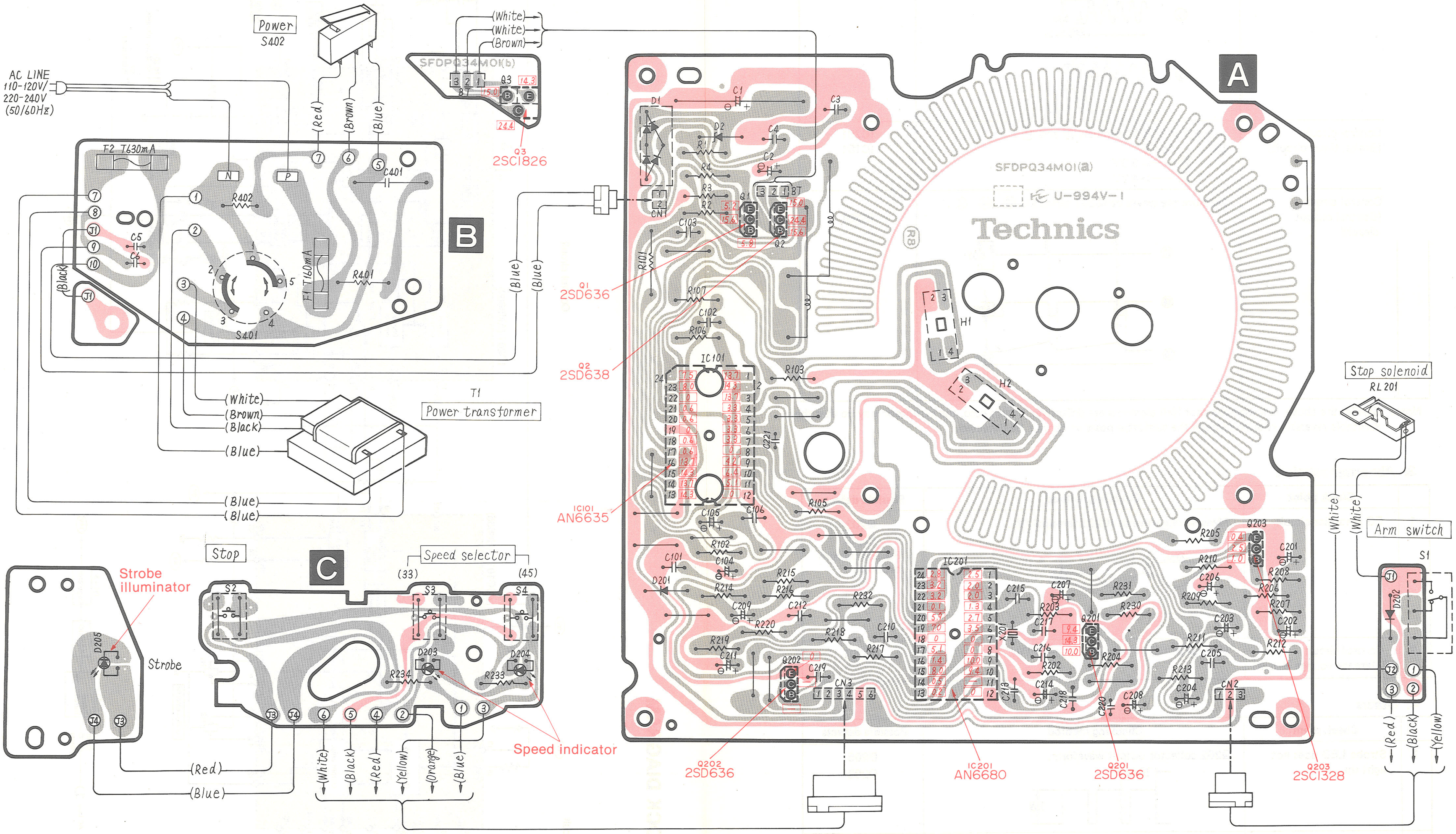
	Check point	Checking method	Possible defects
1	Strobe LED does not light up.	Q202 collector output waveform. 	D205 Q202
2	33/45 r.p.m. changeover is impossible.	Voltage at IC201 terminals ⑥ and ⑦. Terminal \ Speed: 33 / 45 ⑥: 3.5V / 0V ⑦: 0V / 4.0V	IC201 S3, 4

■ BLOCK DIAGRAM


Control circuit
Drive Circuit
IC201 (AN6680)
IC101 (AN6635)
X201
Q203 FG Amp.
FG Coil
B.P.F.
Q202 LED driver
D205 Strobe illuminator
O.S.C.
1/2
Buffer
FG Amp.
1/16
1/N
Brake timer
Start/stop
33/45 selector
Schmitt
Speed control
Phase control
Filter amp.
Rest
Power
Q201 Regulator
RL201 Start/stop plunger
S2 (Start/stop)
S1 on off (Arm switch)
S4 (45)
S3 (33) (Speed selector)
D204
D203 Speed indicator
9V
14V
Operation control circuit
Hall element power
Rotation detector
Amp.
Mix
Output amp.
H1
H2
Position detector
Drive coil
T1 Power transformer
D1 Rectifier
Q1~3 Regulator
S402 Power
AC Line

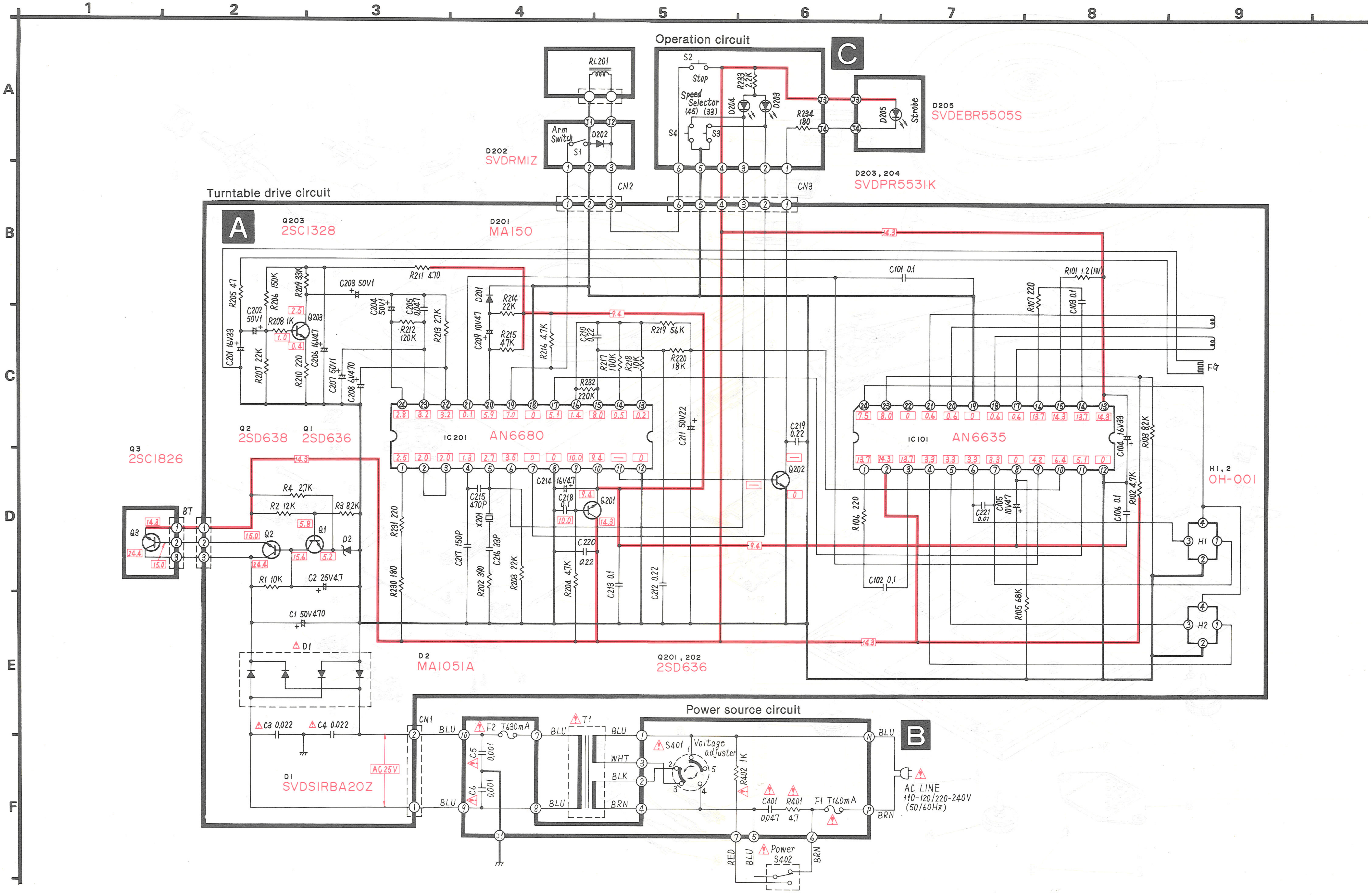
CIRCUIT BOARD AND WIRING CONNECTION DIAGRAM

🟥 Ground (Earth) lines


AC LINE
110-120V/
220-240V
(50/60Hz)
Power
S402
F2 T630mA
N
P
C401
R402
C5
C6
B
F1 T160mA
R401
S401
(Red)
(Brown)
(Blue)
(Black)
(White)
(White)
(Brown)
SFDPQ34M01(b)
Q3
BT
Q3
2SC1826
(Blue)
(Blue)
T1
Power transformer
(White)
(Brown)
(Black)
(Blue)
(Blue)
(Blue)
A
SFDPQ34M01(a)
U-994V-1
Technics
RB
CN1
D1
D2
C1
C3
C4
C2
R1
R2
R3
R4
Q1
Q2
C103
R101
R107
C102
R106
IC101
R103
C221
C105
C106
R105
R102
C104
C101
D201
R214
R215
R216
C209
C212
R232
R220
R218
R219
C211
R217
Q202
C219
CN3
C210
IC201
C215
C207
R231
R203
R230
X201
C217
C216
Q201
R202
C214
C213
C218
C220
C208
R204
R205
Q203
C201
R210
R208
R206
R209
C206
R207
C202
C203
R211
R212
R213
C205
C204
CN2
H1
H2
Q1
2SD636
Q2
2SD638
IC101
AN6635
Q202
2SD636
IC201
AN6680
Q201
2SD636
Q203
2SC1328
Stop solenoid
RL201
(White)
(White)
Arm switch
S1
D202
(Red)
(Black)
(Yellow)
Strobe illuminator
D205
Strobe
(Red)
(Blue)
Stop
C
Speed selector
(33)
(45)
S2
S3
S4
D203
D204
R234
R233
(White)
(Black)
(Red)
(Yellow)
(Orange)
(Blue)
Speed indicator

■ SCHEMATIC DIAGRAM

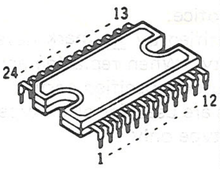
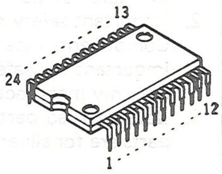
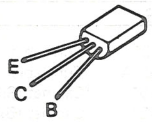
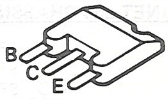
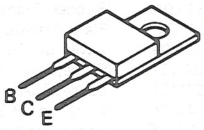
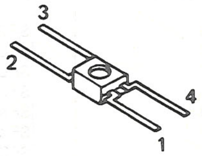
(This schematic diagram may be modified at any time with the development of technology.)


1
2
3
4
5
6
7
8
9
A
B
C
D
E
F
Operation circuit
C
RL201
Arm Switch
S1
D202
J1
J2
D202
SVDRMIZ
S2
Stop
Speed Selector
(45) (33)
S4
S3
R233 2.2K
D204
D203
R234 180
J3
J4
D205
Strobe
D205
SVDEBR5505S
D203, 204
SVDPR5531K
CN2
CN3
Turntable drive circuit
A
Q203
2SC1328
D201
MA150
R205 4.7
R206 150K
R209 33K
C202 50V1
R208 1K
Q203
C203 50V1
R211 470
C204 50V1
C205 0.047
R212 120K
R213 27K
D201
R214 22K
R215 47K
C209 10V47
R216 4.7K
C210 0.22
R219 56K
R217 100K
R218 10K
R220 18K
R232 220K
C201 16V33
R207 22K
R210 220
C206 16V47
C207 50V1
C208 6.3V470
IC201
AN6680
C211 50V22
C219 0.22
Q202
C214 16V47
C215 470P
C218 0.1
Q201
X201
C216 33P
C217 150P
R231 220
R230 180
R202 390
R203 22K
R204 4.7K
C220 0.22
C213 0.1
C212 0.22
C101 0.1
R101 1.2 (1W)
R107 220
C103 0.1
FG
IC101
AN6635
C104 16V33
R103 82K
R102 4.7K
C106 0.1
R106 220
C221 0.01
C105 10V47
C102 0.1
R105 68K
H1, 2
OH-001
H1
H2
Q2
2SD638
Q1
2SD636
Q3
2SC1826
R4 2.7K
R3 8.2K
R2 12K
Q1
Q2
D2
BT
R1 10K
C2 25V4.7
C1 50V470
D1
D2
MA1051A
Q201, 202
2SD636
C3 0.022
C4 0.022
D1
SVDSIRBA20Z
AC 25V
CN1
BLU
F2 T630mA
C5 0.001
C6 0.001
T1
BLU
WHT
BLK
BRN
Power source circuit
S401
Voltage adjuster
R402 1K
C401 0.047
R401 4.7
F1 T160mA
BLU
BRN
B
AC LINE
110-120/220-240V
(50/60Hz)
RED
BLU
BRN
Power
S402
14.3
24.4
15.0
16.0
5.8
15.6
5.2
24.4
2.5
1.0
0.4
2.8
3.2
3.2
0.1
5.9
7.0
0
5.1
1.4
8.0
0.5
0.2
2.5
2.0
2.0
1.3
2.7
3.5
0
0
10.0
9.4
0
9.4
10.0
14.3
7.5
8.0
0
0.6
0.6
0
0.6
0.6
13.7
14.3
13.7
14.3
13.7
14.3
13.7
3.3
3.3
3.3
3.3
0
4.2
6.4
5.1
0

Notes:

1. **S1** : Arm switch in "**on**" position.
2. **S2** : Stop switch in "**off**" position.
   (not push condition)
3. **S3, 4** : Speed selector switch in "**off**" position.
   (not push condition)
   S3 . . . . 33-1/3 r.p.m.   S4 . . . . 45 r.p.m.
4. **S401** : Voltage adjuster switch in "**220 – 240V**" position.
   110 – 120 ⟷ 220 – 240V
5. **S402** : Power switch in "**on**" position.
6. The value in ☐ is the reference voltage at stop of turntable, measured by DC electronic circuit tester (high-impedance) on the basis of chassis. (S1 . . . . "on")
   Therefore, the measured value may include some error depending on the internal impedance of DC circuit tester and other conditions.
7. ▬ +Ⓑ voltage line.
8. Important safety Notice:
   Components identified by ⚠ mark have special characteristics important safety.
   When replacing any of these comporments, use only manufacturer's specified parts.

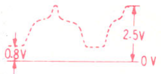
● Terminal guide of transistors and IC's

AN6635 	**AN6680** 
2SC1328 	**2SD636** **2SD638** 
2SC1826 	**OH-001** 

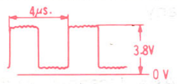
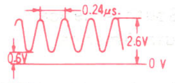
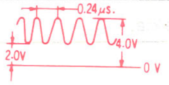
● Reference voltage and waveform at each IC terminal (pin)

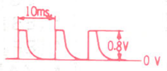
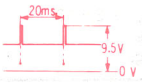
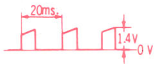
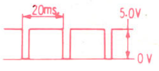
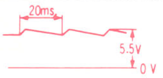
This indicated voltage values and waveform are measured by oscilloscope at 33 r.p.m. rotation.

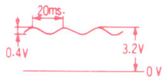
IC101 (AN6635)

No.	Stop	Start	No.	Stop	Start	No.	Stop	Start
①	13.7V	13.7V	⑨	0.1V	4.2V	⑰	0.6V	
②	14.3V	14.3V	⑩	6.4V	5.2V	⑱		
③	13.7V	13.7V	⑪	5.1V	5.1V	⑳		
④	3.3V	3.3V	⑫	0V	0V	㉑		
⑤	3.3V	3.3V	⑬	14.3V	14.3V	⑲	0V	0V
⑥	3.3V	3.3V	⑭	13.7V	13.7V	㉒	0V	0V
⑦	3.3V	3.3V	⑮	14.3V	14.3V	㉓	8.0V	7.9V
⑧	0V	0V	⑯	13.7V	13.7V	㉔	7.5V	7.5V

IC201 (AN6680)

No.	Stop	Start
①	2.5V	2.5V
② ③		Same as at left
④		Same as at left
⑤		Same as at left
⑥	3.5V (45r.p.m. . . . 0V)	3.5V (45r.p.m. . . . 0V)
⑦	0V (45r.p.m. . . 4.0V)	0V (45r.p.m. . . 4.0V)
⑧	0V	0V
⑨	10.0V	10.0V

No.	Stop	Start
⑩	9.4V	9.4V
⑪		Same as at left
⑫	0V	0V
⑬	0.2V	
⑭		
⑮	8.0V	
⑯	1.4V	5.2V

No.	Stop	Start
⑰	5.1V	5.1V
⑱	0V	0V
⑲	0V	7.0V
⑳	5.9V	0.2V
㉑	0.1V	4.2V
㉒	3.2V	3.0V
㉓	3.2V	
㉔	2.8V	3.0V

■ REPLACEMENT PARTS LIST...Cabinet, Chassis and Packing Parts

Notes:
1. Part numbers are indicated on most mechanical parts. Please use this part number for parts orders.
2. Important safety notice:
   Components indentified by ⚠ mark have special characteristics important for safety. When replacing any of these components, use only manufacturer's specified parts.
3. Ⓚ-marked parts are used for black type only, while ○-marked parts are for silver type only.
4. Parts other than Ⓚ and ○-marked are used for both black and silver types.
5. Bracketed indications in Ref. No. columns specify the area. Parts without these indications can be used for all areas.

Black type model No. : SL-Q212 (K)

Ref. No.		Part No.	Part Name & Description
CABINET and CHASSIS PARTS			
1		SFTGQ22N01	Turntable Mat
2		SFTEQ22N01A	Turntable
3	○	SFACQ21M01	Cabinet (Silver)
3	Ⓚ	SFACQ21M21	Cabinet (Black)
4 [EC]		SFNNQ21S01	Name Plate
4 [EK, XL]		SFNNQ21G02	Name Plate
4 [XA, XM]		SFNNQ21X01	Name Plate
4 [Other Areas]		SFNNQ21R01	Name Plate
5		SFGCD34X01	Rubber, Transformer
6		SFUPD34N01	Plate, Transformer
7		SFUMQ11N09	Cover, Strobe
8		SFUMD34N01	Guide, Speed Selector/Stop Switch
9		SFKKQ21M01	Badge, Quartz
10		SFKTQ34N03	Knob, Speed Selector/Stop Switch
11		SFDJQ34N03E	Connector Ass'y 6P
12		SFUMQ34N02	Guide, Power/Cueing Switch
13		SFKTQ34N01	Knob, Cueing
14		SFKTQ34N02	Knob, Power Switch
15		SFUMQ34N13	Plate, Power Switch
16		SFXJQ34N02	Shaft, Power Switch
17		SFUMQ34N13	Plate, Power Switch
18		SFDSTWM9901A	Power Switch
19		SFUMQ34N23	Slider, Cueing
20		SFXJQ34N01	Shaft, Guide
21		SFQA130–11	Spring, Cueing
22		SFYB–5–22	Ball, Cueing
23		SFUMQ34N04	Rink, Cueing (A)
24		SFXOQ34N01	Pipe, Cueing
25		SFUMB33N11	Rink, Cueing (B)
26		SFUZQ34N02	Rod, Cueing
27		SFAUD34N01	Bottom Board
28		SFUPQ34N01	Cover, Gear
29		SFUZQ34N06E	Latch, Gear Cover
30		SFGAD34N01	Audio Insulator
31 [EK]	⚠	SJA139	AC Cord
31 [XL]	⚠	SJA141	AC Cord
31 [Other Areas]	⚠	SJA137	AC Cord
32 [XL]		SFUM190–12	Bushing, AC Cord
32 [Other Areas]		SFUM190–11	Bushing, AC Cord
33		SFDH212–01	Phono Cord
34		SFEL028–01E	Ground Wire
35		SFUM212–08	Bushing, Phono Cord
36		SFMZQ34N04	Spacer, Drive P.C.B.
37		SFATB33N01A	Hinge
38		SFUMD20–02	Spacer, LED
		SFADQ34N01E	Dust Cover
SCREWS, WASHERS and CIRCLIPS			
N1		**XTV3+8BFN**	Screw, Tapping, + 3 x 8
N2		**XTV3+10BFN**	Screw, Tapping, + 3 x 10
N3		XTW3+8T	Screw
N4		XTWS3+20QFYR	Screw, Tapping, + 3 x 20
N5		XTW3+10Q	Screw, Tapping, + 3 x 10
N6		SFXGQ34N02	Screw
N7		**XTS3+16BFZ**	Screw, Tapping, + 3 x 16
N8		SFCZV8800	Screw, Cartridge
N9		SFPEW9601	Washer, Cartridge

Ref. No.		Part No.	Part Name & Description
N12		**XSN3+12S**	Screw, Tapping, + 3 x 12
N13		**XWA3B**	Washer, $\phi 3$
N14		**XSN3+8S**	Screw, Tapping, + 3 x 8
N15		**XUC3FT**	Circlips, $\phi 3$
N16		**XUB4FT**	Circlips, $\phi 4$
N17		SFXWQ34N26	Washer
N18		SFXWQ30–11	Washer
N19		**XUC5FT**	Circlips, $\phi 5$
N20		XWE4BW	Washer, $\phi 4$
N21		SFXWQ34N21	Washer
N22		**XTV3+6BFN**	Screw, Tapping, + 3 x 6
N23		**XUC2FT**	Circlips, $\phi 2$
N24		SFPEW13005	Washer
ACCESSORIES			
A1 [E]		SFNUQ21S01	Instructions Book, Printed Matter
A1 [EK]		SFNUQ21G01	Instructions Book, Printed Matter
A1 [Other Areas]		SFNUQ21X01	Instructions Book, Printed Matter
A2		SFWE212–01	Adaptor, 45 r.p.m.
A3 [XA, XM]		SFDKI19118	2 Pin Plug
PACKING PARTS			
P1	○	SFHPQ21M01	Carton Box (Silver)
P1 [EF] only	○	SFHPQ21C01	Carton Box (Silver)
P1	Ⓚ	SFHPQ21M21	Carton Box (Black)
P1 [EF] only	Ⓚ	SFHPQ21J21	Carton Box (Black)
P2		SFHHQ34N01	Pad, Front
P3		SFHHQ34N02	Pad, Rear
P4		SFHDD34M01	Pad, Turntable
P5		SFHZ144X02	Sheet
P6		SFYH60X60	Polyethylene Bag, Unit and Dust Cover
P7		SFYH40X45	Polyethylene Bag, Turntable
P8		SPB1083	Polyethylene Bag, Accessories
P9 [XA, XM]		SFHDQ34X01	Pad, Front
P10 [XA, XM]		SFHDQ34X02	Pad, Rear

Areas

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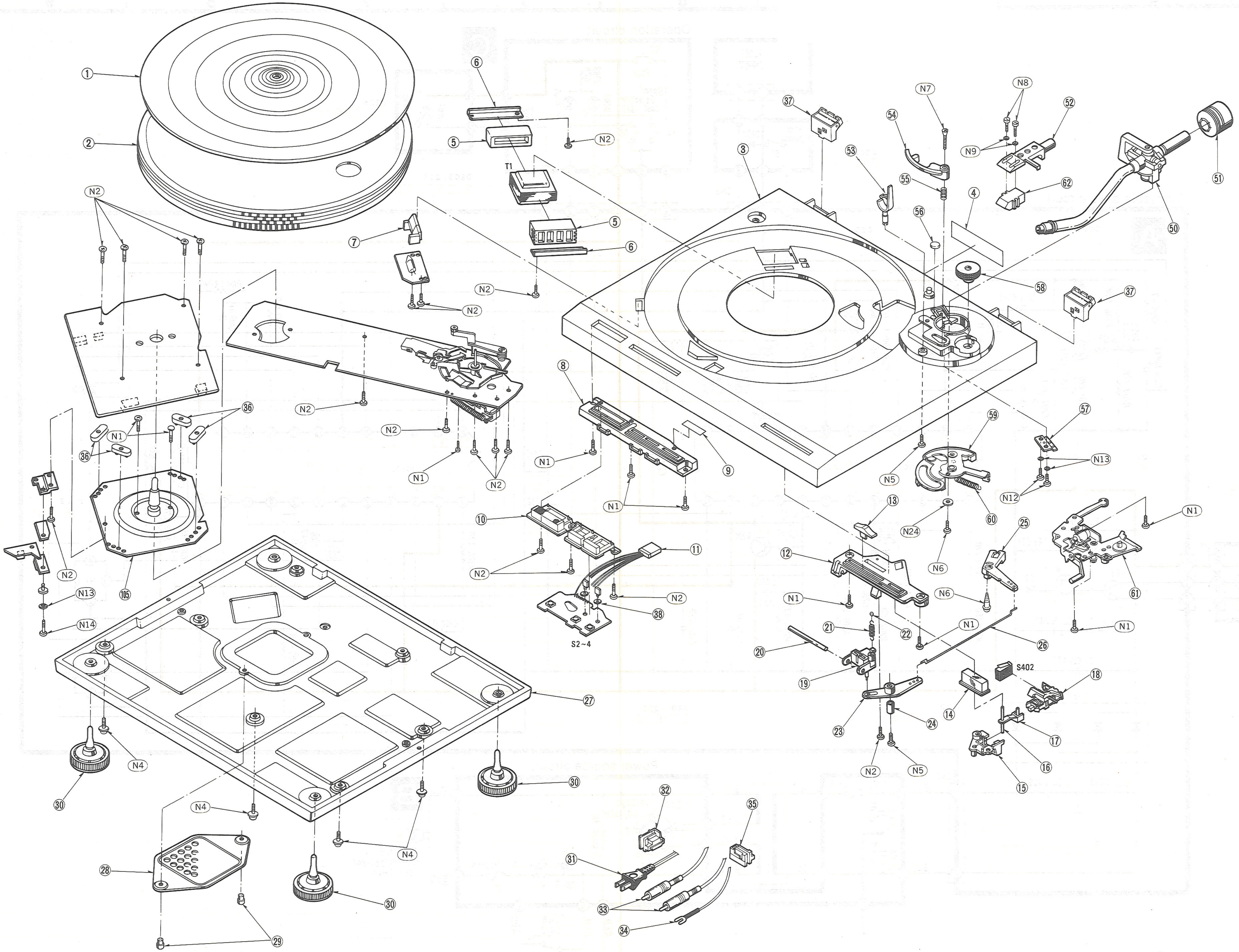
- * [XM] is available in Central South America.
- * [EH] is available in Holland.
- * [Ei] is available in Italy.
- * [EC] is available in Czechoslovakia.

■ EXPLODED VIEWS......Cabinet & Chassis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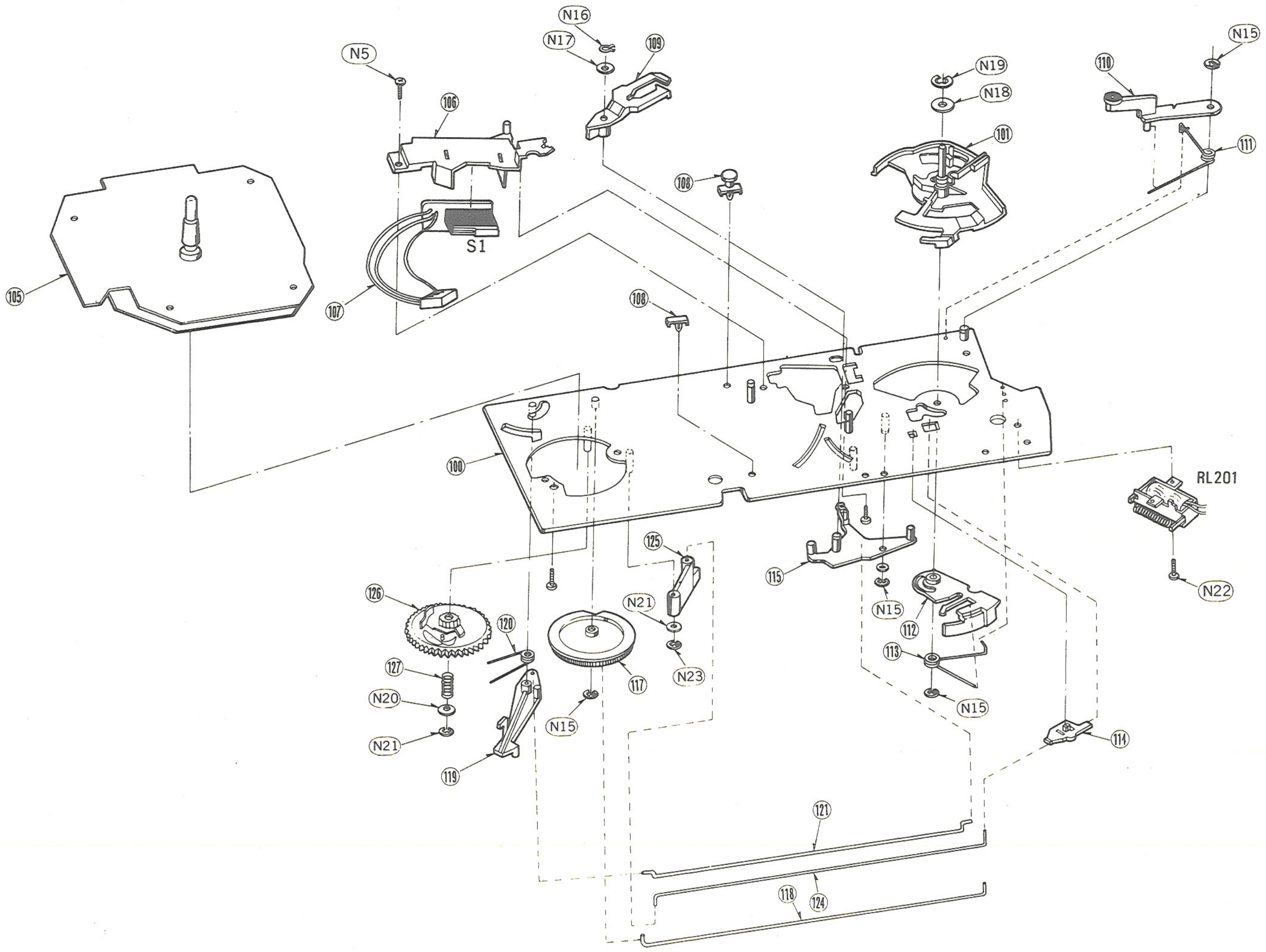
■ EXPLODED VIEWS......Automatic Mechanism Plate



Ref. No.		Part No.	Part Name & Description
TONE ARM PARTS			
50	○	SFPAM30301A	Tone Arm (Silver)
50	Ⓚ	SFPAM30302A	Tone Arm (Black)
51		SFPWG30301A	Balance Weight
52		SFPCC31002K	Head Shell
53		SFPRT30301E	Arm Rest
54		SFPRT30302E	Lift Arm
55		SFPSP30304	Spring, Lift Arm
56	○	SFGK170–01	Rubber Cap (Silver)
56	Ⓚ	SFGK171F01	Rubber Cap (Black)
57		SFUPD34N02	Clamper, Phono Cover
58		SFPJK30301	Knob, Anti-Skate Force Control
59		SFPAB30301A	Plate, Tone Arm
60		SFPSP30302	Spring, Anti-Skate Force Control
61		SFPAB30305A	Plate, Lift Ass'y
62		EPC–U25S	Cartridge ** Not available as parts, please
		EPS–25CS	Stylus order to Sales department
AUTOMATIC MECHANISM ASS'Y			
100		SFUKQ22N01E	Plate, Automatic Mechanism
101		SFUMQ22N03E	Cam, Drive
105		SFMZQ34N01A	Stater Frame Ass'y
106		SFUMQ34N36	Case, Switch
107		SFDJQ34N02E	Connector Ass'y 3P
108		SFEZQ34N01	Clamper
109		SFUMQ34N38	Lever, Stop
110		SFUMQ34N43	Plate, Brake
111		SFQSQ34N28	Spring, Brake
112		SFUMQ22N02E	Cam, Start
113		SFQSQ22N01	Spring, Start
114		SFUMQ34N32	Support, Actuating Rod
115		SFUMQ34N44	Switch Lever
117		SFUGQ34N22	Gear, Drive
118		SFQSQ34N22	Rod, Drive
119		SFUMQ34N31	Plate, Stop Gear
120		SFQSQ34N21	Spring, Stop Gear
121		SFQSQ34N26	Rod, Switch
124		SFQSQ34N23	Rod, Actuating
125		SFUMQ34N42	Connector, Actuating
126		SFUGQ34N21E	Main Gear Ass'y
127		SFQAQ34N21	Spring, Main Gear

■ REPLACEMENT PARTS LIST...Electrical Parts

Notes:
1. Part numbers are indicated on most mechanical parts. Please use this part number for parts orders.
2. Important safety notice:
   Components identified by ⚠ mark have special characteristics important for safety. When replacing any of these components, use only manufacturer's specified parts.
3. Bracketed indications in Ref. No. columns specify the area. Parts without these indications can be used for all areas.

Ref. No.		Part No.	Part Name & Description
INTEGRATED CIRCUITS			
IC101		AN6635	IC, Drive
IC201		AN6680	IC, Control
TRANSISTORS			
Q1, 201, 202		2SD636	Transistor, Regulator & Switching
Q2		2SD638	Transistor, Regulator
Q3		2SC1826	Transistor, Regulator
Q203		**2SC1328–T**	Transistor, FG Amplifier
DIODES			
D1	⚠	SVDS1RB20Z	Diode, Rectifier
D2		MA1051A	Diode, 5.1V Zener
D201, 202		**MA162A**	Diode
D202		SVDRM1Z	Diode
D203, 204		SVDPR5531K	Light Emitting Diode Speed Indicator (Red)
D205		SVDEBR5505S	Light Emitting Diode, Strobe
HALL ELEMENT			
H1, 2		OH-001	Hall Element, Turntable Position Detector
CRYSTAL			
X201		SVQU306115	Crystal, 4.19328MHz Counter Oscillator
SOLENOID			
RL201		SFDZQ34N01Z	Solenoid Ass'y Start/Stop
SWITCHES			
S1		SFDSAH2985	Switch, Arm (Rest) Switch
S2 ~ 4		EVQQJR02K	Switch, Start/Stop & Speed Selector
S401	⚠	SFDSHXW0225	Switch, Voltage Adjuster
S402	⚠	SFDSSS5GLP	Switch, Power Source
FUSES			
F1	⚠	XBA2C016T1A	Fuse, T160mA 250V
F2	⚠	XBA2C06TR0	Fuse, T630mA 250V
POWER TRANSFORMER			
T1	⚠	SLT57P24E	Transformer, Power Source
RESISTORS			
R1		**ERD25FJ103**	Carbon, 1/4W, 10kΩ, ± 5%
R2		**ERD25TJ123**	Carbon, 1/4W, 12kΩ, ± 5%
R3		**ERD25FJ822**	Carbon, 1/4W, 8.2kΩ, ± 5%
R4		**ERD25FJ272**	Carbon, 1/4W, 2.7kΩ, ± 5%
R101		**ERX1ANJ1R2**	Metal Oxide, 1W, 1.2Ω, ± 5%
R102		**ERD25FJ472**	Carbon, 1/4W, 4.7kΩ, ± 5%
R103		**ERD25FJ822**	Carbon, 1/4W, 8.2kΩ, ± 5%
R105		**ERD25TJ683**	Carbon, 1/4W, 68kΩ, ± 5%
R106, 107		**ERD25FJ221**	Carbon, 1/4W, 220Ω, ± 5%
R202		**ERD25FJ391**	Carbon, 1/4W, 390Ω, ± 5%
R203		**ERD25TJ223**	Carbon, 1/4W, 22kΩ, ± 5%
R204		**ERD25FJ472**	Carbon, 1/4W, 4.7kΩ, ± 5%
R205		**ERD25FJ470**	Carbon, 1/4W, 47Ω, ± 5%
R206		**ERD25TJ154**	Carbon, 1/4W, 150kΩ, ± 5%
R207		**ERD25TJ223**	Carbon, 1/4W, 22kΩ, ± 5%
R208		**ERD25FJ102**	Carbon, 1/4W, 1kΩ, ± 5%
R209		**ERD25FJ332**	Carbon, 1/4W, 3.3kΩ, ± 5%
R210		**ERD25FJ221**	Carbon, 1/4W, 220Ω, ± 5%
R211		**ERD25FJ471**	Carbon, 1/4W, 470Ω, ± 5%
R212		**ERD25TJ124**	Carbon, 1/4W, 120kΩ, ± 5%
R213		**ERD25FJ272**	Carbon, 1/4W, 2.7kΩ, ± 5%
R214		**ERD25TJ223**	Carbon, 1/4W, 22kΩ, ± 5%
R215		**ERD25TJ473**	Carbon, 1/4W, 47kΩ, ± 5%
R216		**ERD25FJ472**	Carbon, 1/4W, 4.7kΩ, ± 5%
R217		**ERD25TJ104**	Carbon, 1/4W, 100kΩ, ± 5%
R218		**ERD25FJ103**	Carbon, 1/4W, 10kΩ, ± 5%
R219		**ERD25TJ563**	Carbon, 1/4W, 56kΩ, ± 5%
R220		**ERD25TJ183**	Carbon, 1/4W, 18kΩ, ± 5%
R230		**ERD25FJ181**	Carbon, 1/4W, 180Ω, ± 5%
R231		**ERD25FJ221**	Carbon, 1/4W, 220Ω, ± 5%
R232		**ERD25TJ224**	Carbon, 1/4W, 220kΩ, ± 5%
R233		**ERD25FJ222**	Carbon, 1/4W, 2.2kΩ, ± 5%
R234		**ERD25FJ181**	Carbon, 1/4W, 180Ω, ± 5%
R401	⚠	**ERD50FJ4R7**	Carbon, 1/2W, 4.7Ω, ± 5%
R402	⚠	**ERD25FJ102**	Carbon, 1/4W, 1kΩ, ± 5%
CAPACITORS			
C1		**ECEB1HS471**	Electrolytic, 50V, 470μF
C2		**ECEA25Z4R7**	Electrolytic, 25V, 4.7μF
C3, 4	⚠	**ECKD1H223ZF**	Ceramic, 50V, 0.022μF, $^{+80}_{-20}$%
C5, 6	⚠	**ECKD1H102KB**	Ceramic, 50V, 0.001μF, ± 10%
C101, 102		**ECQM1H104JZ**	Polyester, 50V, 0.1μF, ± 5%
C103		**ECQM1H104JZ**	Polyester, 50V, 0.1μF, ± 5%
C104		**ECEA1CS330**	Electrolytic, 16V, 33μF
C105		**ECEA1AS470**	Electrolytic, 10V, 47μF
C106		ECKF1E104ZV	Ceramic, 25V, 0.1μF, $^{+80}_{-20}$%
C201		**ECEA1CS330**	Electrolytic, 16V, 33μF
C202, 203		**ECEA50Z1**	Electrolytic, 50V, 1μF
C204		**ECEA50Z1**	Electrolytic, 50V, 1μF
C205		**ECQM1H473JZ**	Polyester, 50V, 0.047μF, ± 5%
C206		**ECEA1ES470**	Electrolytic, 25V, 47μF
C207		**ECEA50Z1**	Electrolytic, 50V, 1μF
C208		**ECEA0JS471**	Electrolytic, 6.3V, 470μF,
C209		**ECEA1AS470**	Electrolytic, 10V, 47μF
C210		ECQV05224JZ	TF, 50V, 0.22μF, ± 5%
C211		**ECEA50Z2R2**	Electrolytic, 50V, 2.2μF
C212		ECQV05224JZ	TF, 50V, 0.22μF, ± 5%
C213		ECKF1E104ZV	Ceramic, 25V, 0.1μF $^{+80}_{-20}$%
C214		**ECEA1ES470**	Electrolytic, 25V, 47μF
C215		**ECCD1H471K**	Ceramic, 50V, 470pF, ± 10%
C216		**ECCD1H330K**	Ceramic, 50V, 33pF, ± 10%
C217		**ECCD1H151K**	Ceramic, 50V, 150pF, ± 10%
C218		ECKF1E104ZV	Ceramic, 25V, 0.1μF, $^{+80}_{-20}$%
C219, 220		ECQV05224JZ	TF, 50V, 0.22μF, ± 5%
C221		**ECQM1H103JZ**	Polyester, 50V, 0.01μF, ± 10%
C401 [Other Areas]	⚠	ECQE2A473MZ	Polypropylene, 250VAC, 0.047μF, ± 20%
C401 [E, EC, EK, XL]	⚠	ECQU2A473MF	Polypropylene, 250VAC, 0.047μF, ± 20%

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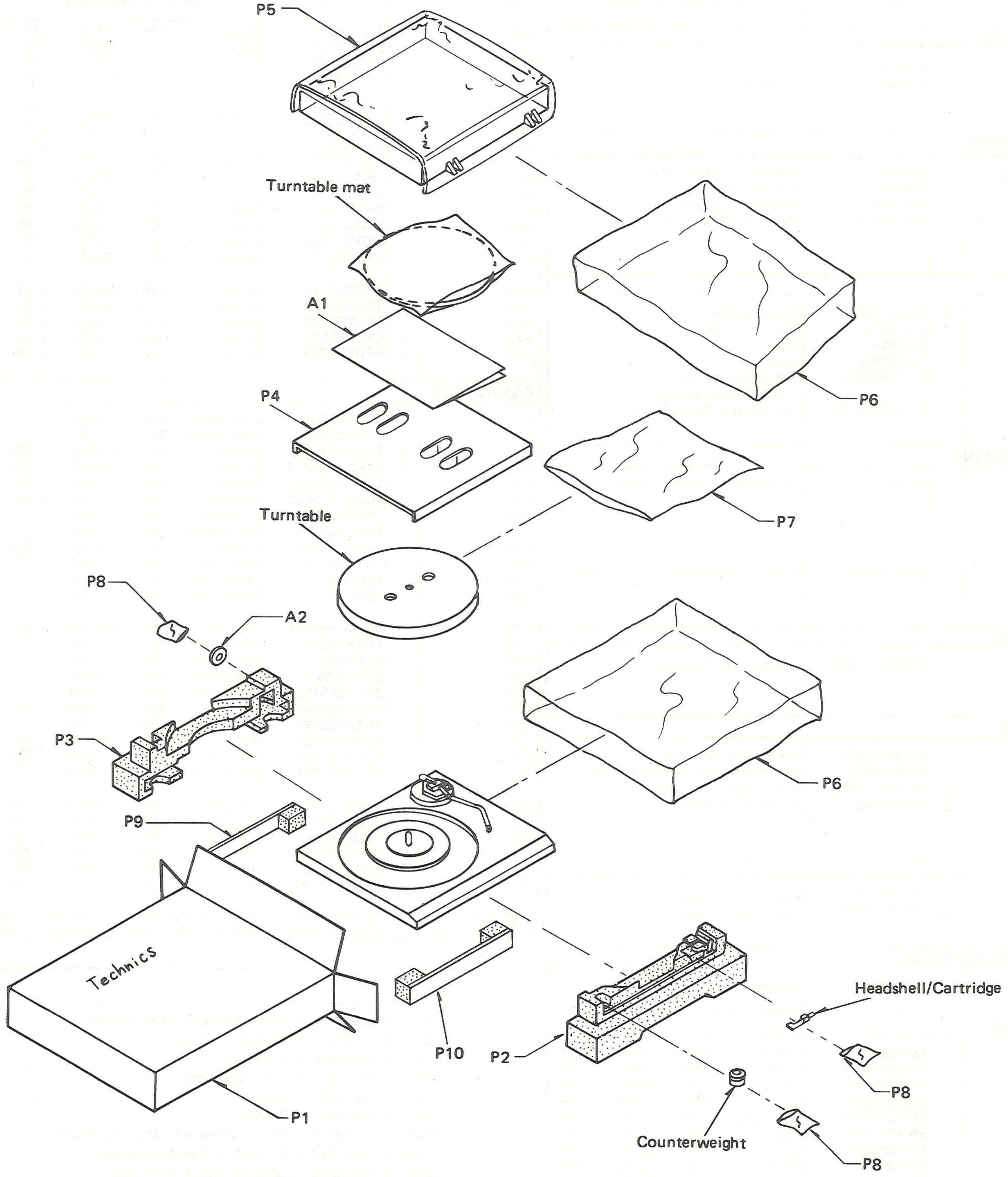
■ PACKINGS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Turntable mat
A1
P6
P4
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Turntable
P8
A2
P3
P6
P9
Technics
Headshell/Cartridge
P10
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Counterweight
P8

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